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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/765,459	02/11/2004	Hirokazu Tajima	45567-00080	8752
25231	7590	11/23/2005		
MARSH, FISCHMANN & BREYFOGLE LLP 3151 SOUTH VAUGHN WAY SUITE 411 AURORA, CO 80014			EXAMINER SHAKERI, HADI	
			ART UNIT	PAPER NUMBER
			3723	

DATE MAILED: 11/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Taka

Office Action Summary	Application No.	Applicant(s)	
	10/765,459	TAJIMA ET AL.	
	Examiner	Art Unit	
	Hadi Shakeri	3723	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 8-13 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 8-13 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☒ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>021104</u> . | 6) <input type="checkbox"/> Other: ____. |

Specification

1. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors, e.g., page 16, line 17, "exceeds μm " should be changed to, --exceeds 60 μm —. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Objections

2. Regarding claim 13, the language as written renders the claim indefinite/objectionable, i.e., whether the claim is dependent or independent. If the claim is independent, i.e., "a glass substrate" the reference to "claim 8", renders it indefinite, since the scope can not be ascertained, if the claim is a dependent claim, then it fails to further limit the parent claim, i.e. "a method for manufacturing a glass".

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 9-13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. Claims 9 and 11 recite the limitation "the number of pores", "the opening sizes of the pores" in line 1. There are insufficient antecedent basis for these limitations in the claims.

6. The term "compression deformation amount" in claim 10 is a relative term, which renders the claim indefinite. The term "compression deformation amount" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Per Table 1, the compression deformation does not depend on the hardness of the pad, but that

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it depends on variety of parameters, e.g., size and numbers of pores, which in itself indefinite for reciting range within a range, however a compression deformation amount would also depend on the load applied to the pad, therefor, lacking all possible parameters listed in the claim, almost any pad, regardless of its hardness, depending on the load applied to a particular surface area may produce deformation within the specified range.

7. Claim 12 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps are: steps providing for structures required to produce the removal variation as recited. Many factors are involved for a double polishing apparatus polishing multiple workpiece, to provide a range of removal for all of the workpieces within a specific range, e.g., see cited references Waddle et al. and Katagiri et al. The claim is narrative and merely recites for the workpieces to be uniformly polished within a specific.

8. Claim 13 as indicated above in section 2, is ambiguous.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 8, 10 and 13 (as best understood) are rejected under 35 U.S.C. 102(b) as being anticipated by Fujimura et al. (6,371,834).

Fujimura et al. discloses all of the limitations of claim 1, i.e., a method of manufacturing a glass substrate by polishing the glass utilizing an abrasive cloth in the final step (Abstract).

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Regarding claim 10 and 13 (as best understood), Fujimura et al. meets the limitations, i.e., the pad or polishing cloth (e.g., MHC15A or MHC14E) deforming between 40 to 60 micron under certain load; glass having a surface roughness of 0.15 nm (Table 3).

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 9 and 11 (as best understood) are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujimura et al. in view of Hsu et al. (6,890,244).

Fujimura et al. discloses using polyurethane pads considered meeting all of the limitations of claims 9 and 11 (as best understood), except for disclosing the number and the sized of the pores. It also discloses that the abrasive cloth used is not particularly restricted to any specific one (03:58-60), and that it uses 0.2 micron abrasives (05:26). Hsu et al. teaches polishing pads for use in CMP wherein the size of the pores are dictated by the size of the abrasive particles used, e.g., for 100 to 200 nm particles, pore sizes of 30 to 100 microns are preferred. It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to modify the invention of Fujimura et al. with the pore sizes, e.g., 30-100 microns, as taught by Hsu et al. to enhance the operation for the abrasive used.

Regarding the density or the number of pores, Hsu teaches the ratio of fibers to the matrix depends on the intended use, i.e., higher ratio for more compressive pad. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use e.g., 500 pores per mm square, dependent on work-piece/operational parameters, involves only routine skill in the art, and since it has been held that where the general conditions of a claim

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are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

13. Claim 13 (as best understood) is rejected under 35 U.S.C. 103(a) as obvious over Darcangelo et al. (6,322,425).

Darcangelo et al. meets all the limitations, since product-by-process claims are not limited to the manipulations of the process steps, only the structure implied by the steps, thus a device produced by the method of Darcangelo et al. would meet all the structural limitations, i.e., less than 2 nm surface roughness, wherein producing a glass substrate of 0.15 nm would have obvious to one of ordinary skill in the art for a particular application. (See MPEP 2113 [R-1])

Double Patenting

14. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

15. Claims 8-13 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-39 of U.S. Patent No. 6,736,705 in view of prior art cited above. The mentioned US Patent reads over the claimed subject matter of claims 8-13

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as best understood, except for specific pad properties, all obvious to one of ordinary skill in view of prior art cited above.

16. Claims 8-13 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-20 of U.S. Patent No. 6,749,487 in view of prior art cited above. The mentioned US Patent reads over the claimed subject matter of claims 8-13 as best understood, except for specific pad properties, all obvious to one of ordinary skill in view of prior art cited above.

17. Claims 8-13 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-16 of U.S. Patent No. 6,852,003 in view of prior art cited above. The mentioned US Patent reads over the claimed subject matter of claims 8-13 as best understood, except for specific pad properties, all obvious to one of ordinary skill in view of prior art cited above.

18. Claims 8-13 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-13 of U.S. Patent No. 6,932,677 in view of prior art cited above. The mentioned US Patent reads over the claimed subject matter of claims 8-13 as best understood, except for specific pad properties, all obvious to one of ordinary skill in view of prior art cited above.

Conclusion

19. Prior art made of record and not relied upon are considered pertinent to applicant's disclosure. Beresford et al., waddle et al. and Katagiri et al. are cited to show related inventions.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hadi Shakeri whose telephone number is (571) 272-4495. The examiner can normally be reached on Monday-Thursday.

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The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'Hadi Shakeri', with a stylized flourish at the end.

Hadi Shakeri
Primary Examiner
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November 21, 2005